What is claimed is:

1. An optical coupling element comprising:

a translucent body configured to be received within a hole including an optical entry/exit face and at least one optical entry/exit stacking face; and

a light directing member secured within the translucent body to direct a light signal between the optical entry/exit face and the at least one optical entry/exit stacking face.

2. The optical coupling element of claim 1 wherein the light directing member comprises a mirror fixedly embedded in the optical element to deflect the light signal therein.

3. The optical coupling element of claim 1 wherein the light directing member comprises a light beam splitter/combiner fixedly embedded in said optical element to direct a light beam in at least two different directions.

4. The optical coupling element of claim 1 wherein the light directing member comprises a light transparent material that directs the light signal from the optical entry/exit face to the further optical entry/exit face without deflecting the light signal.

4. The optical coupling element of claim 1 wherein the optical coupling element has a cylindrical shape for rotationally aligning the optical coupling elements at a desired angular position.

5. The optical coupling element of claim 1 wherein the optical coupling element incudes at least two light directing members therein.

6. The optical coupling element of claim 5 wherein the two light directing members are located in optical alignment with each other so that a light signal received by one of the two light directing members is directed into the second of the two light directing members.

7. The optical coupling element of claim 5 wherein the optical coupling element includes at least three light directing members therein.

8. The optical coupling element of claim 1 wherein the optical coupling element has a flat top surface and a flat end surface.

9. An optical device wherein a plurality of three optical coupling elements are combined in a stack such that when light leaves one of said plurality of optical coupling elements it enters another of said plurality of optical coupling elements with said optical plurality of coupling elements comprise:

at least one of said plurality of optical coupling elements is a transparent element having a light-reflecting element that changes the direction of light that enters the transparent element; and

at least one of said plurality of optical path elements is a transparent element that separates light into two light paths or alternately combines two light paths into one light path.

10. A multi-layer device comprising:

a first layer having an optical member therein;

a second layer having a further optical member therein;

a via located in said first layer and said second layer;

an optical coupling element located in said via, said optical coupling element having

a first light directing member therein for receiving a light signal from said first layer.

11. The multi-layer device of clam 10 wherein the optical coupling element includes a second light directing member for directing the light signal into said second layer.

12. The multi-layer device of claim 10 including at least two separate optical coupling elements located in a stacked end to end relationship to transmit a light signal from one layer to a second layer.

13. The multi-layer device of claim 10 including a third layer with an optical coupling element located in each of the layers of multi-layered device.

14. The multi-layer device of claim 10 wherein the via extends through said first layer and said second layer.

15. The multi-layer device of claim 10 including a third layer, said third layer having no via therein.

16. The multi-layer device of claim 10 wherein the vias have a sidewall with the dimensions of the sidewall such that an optical coupling element can be frictionally retained therein.

17. The method of forming a light conducting path between at least two substrates comprising:

stacking a first optical substrate on a second optical substrate;

forming a via in the first optical substrate and the second optical substrate;

extending an optical coupling element into the via to permit a light signal to be

transferred between adjacent substrates through the optical coupling element.

18. The method of claim 17 including the step of placing at least two optical coupling elements in an end to end position in the via.

19. The method of claim 17 including the step of embedding a light directing member in the optical coupling element.

20. The method of claim 17 including the step of forming the via through the optical substrates by drilling a hole therein.

21. The method of claim 17 including the step of embedding at least two light directing members in the optical coupling.

22. The method of claim 17 including arranging the optical coupling elements in a point-to-point system.

23. The method of claim 17 including arranging the optical coupling elements in a point-to-many system.

24. The method of claim 17 including arranging the optical coupling elements in a blind optical via.

25. The method of claim 17 including arranging the optical coupling elements in a buried optical via.

26. A substrate:

a first optical member located at a first level in said substrate;

a second optical member located at a second level in said substrate; and

an optical interconnection device having an entry/exit face positioned at the first level in the substrate and an entry/exit face positioned at the second level of the substrate to permit a light signal transfer from the first level in the substrate to the second level in the substrate or vice versa.

27. The substrate of claim 26 including a via in said substrate with said optical interconnection device retained therein.

28. The substrate of claim 26 wherein the optical interconnection device comprises two optical coupling elements stacked in an end-to-end condition.

29. An optical coupling element comprising:

a first optical member located at a first level;

a second optical member located at a second level; and

a translucent body having an entry/exit face positioned at the first level and an entry/exit face positioned at the second level to permit a light signal transfer from the first level to the second level or vice versa.

30. An optical coupling element comprising:

a translucent body;

a first entry/exit face on said body;

a second entry/exit face on said body; and

means within said translucent body for directing a light signal from said first entry/exit face to said second entry/exit face or vice versa.